

Demographic and Academic Characteristics Associated with College Readiness and Early College Success in the Republic of the Marshall Islands

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Demographic and Academic Characteristics Associated with College Readiness and Early College Success in the Republic of the Marshall Islands

Lisa Shannon, Anne Cosby, Bradley Rentz, Molly Henschel, Sheila A. Arens, and Marisa Crowder

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In the Republic of the Marshall Islands, college readiness and early college success are major concerns. More than 75 percent of a recent cohort of incoming students at the College of the Marshall Islands placed into developmental courses, which suggests that students might not be academically prepared to take postsecondary coursework. A lack of research on predictors of college readiness and early college success for Marshallese students makes it difficult to develop and implement targeted interventions. This study examined academic preparation characteristics and the college readiness and early college success of students who graduated from Republic of the Marshall Islands public high schools and enrolled at the College of the Marshall Islands between 2015 and 2017. It also examined the relationships between student demographic and preparation characteristics and college readiness and early college success. College readiness and early college success were defined as achieving all three of the following indicators: placing into only credit-bearing math and English courses, earning all credits attempted during the first year of college, and persisting to a second year of college. About 3 percent of students met all three indicators; 5 percent placed into only credit-bearing math and English courses at the College of the Marshall Islands, 19 percent earned all credits attempted during their first year of college, and 53 percent persisted to a second year of college. Several student characteristics were related to college readiness and early college success. Female students were less likely than male students to persist to a second year of college. Students with a higher cumulative high school grade point average were more likely than other students to earn all credits attempted during their first year of college and to persist to a second year of college.

Why this study?

High enrollment in developmental courses among incoming College of the Marshall Islands students, combined with low college retention, has created growing concern among education stakeholders that many Republic of the Marshall Islands high school graduates are academically unprepared for postsecondary education when they enroll at the College of the Marshall Islands. In 2016, 84 percent of first-time College of the Marshall Islands students placed into developmental math courses, and 77 percent placed into developmental English courses, based on scores on the college placement exam (see box 1 for definitions of key terms used in this report; Vila, 2016). The retention rate from fall 2016 to fall 2017 was 56 percent for first-time students attending the college (College of the Marshall Islands, 2017).

Studies outside the Republic of the Marshall Islands have examined factors associated with success in college. They reveal that college students who enroll in developmental courses take longer to graduate and have lower graduation rates than students who enroll directly in credit-bearing courses (Bailey, 2009a, 2009b; Herman et al., 2017; Jaggars & Stacey, 2014). A previous study in the Commonwealth of the Northern Mariana Islands revealed that female students were more likely to place into credit-bearing English courses, that students with less economic need (those not receiving Pell grants) were more likely to place into credit-bearing math courses, and that students with higher cumulative grade point averages and standardized test scores were more likely to place into both math

For additional information, including an overview of the Marshall Islands education system, technical methods, supporting analyses, and sensitivity analyses, access the report appendixes at <https://go.usa.gov/xsbf>.

and English credit-bearing courses (Herman et al., 2017). Research also suggests that high school context (location and courses offered, for instance), standards, and assessments are related to college preparedness (ACT, 2005).

This study aimed to identify factors associated with college readiness and early college success among high school graduates in the Marshall Islands Public School System. It examined relationships among student demographic and academic preparation characteristics, as well as three indicators of college readiness and early college success. The first indicator reflects students' college readiness: placement into only credit-bearing courses at the College of the Marshall Islands. The second and third indicators reflect students' early college success: completion of all credits attempted during the first year of college and persistence to a second year of college (Hein et al., 2013; Porter & Polikoff, 2012; Stephan et al., 2015).

Results from this study can inform policies and practices related to promoting students' college readiness and success in education institutions in the Republic of the Marshall Islands. Since student-level demographic and academic preparation characteristics for Republic of the Marshall Islands high school students have not previously been linked to indicators of college readiness and early college success, the results offer education stakeholders in the Republic of the Marshall Islands a first opportunity to examine the relationship between college readiness in high school and early college success to inform their decisionmaking. The College of the Marshall Islands is one of two higher education institutions in the islands, and most of its incoming students are graduates of the Marshall Islands Public School System. By illuminating factors associated with college readiness and early college success, this research will enable stakeholders at the college and the school system to design policies and practices that support students in high school and help prepare them for college. (See appendix A for a review of research on this topic.)

Box 1. Key terms

College readiness and early college success. For this study, students demonstrated college readiness and early college success if they achieved all three indicators: placed into only credit-bearing math and English courses at the College of the Marshall Islands, earned all attempted credits during the first year of college, and persisted to a second year of college.

Credit-bearing courses. College courses that allow students to earn credits that can be applied toward a degree or certificate.

Developmental courses. Non-credit-bearing or remedial college courses.

Earning all credits attempted during the first year of college. Successfully earning all attempted credits during a student's first year at the College of the Marshall Islands.

First-time students. Incoming students at the College of the Marshall Islands without any previous college experience.

Persisting to a second year of college. Continuing to a second year at the College of the Marshall Islands after completing a first year at the college. That first year is defined as two consecutive semesters (fall followed by spring, or spring followed by fall), with or without the summer term.

Placing into only credit-bearing math and English courses. Placing into only math and English courses for which credits can be applied toward a degree or certificate during a student's first year at the College of the Marshall Islands. For the 2015 and 2016 cohorts, placement was determined by the College of the Marshall Islands placement exam. For the 2017 cohort, the College of the Marshall Islands started using multiple measures, and placement was determined through placement exams, grade 11 and 12 math and English grades, and cumulative high school grade point averages.

Student academic preparation characteristics. Student academic preparation variables included grade 9–12 math and English course grades, grade 10 Marshall Islands Standards Assessment Test math and English performance, and cumulative high school grade point average.

Student demographic characteristics. Student variables included high school graduation cohort, high school attended, gender, Pell grant recipient status, race/ethnicity, and primary language spoken at home.

Research questions

The study examined the relationships between the demographic and academic preparation characteristics and the college readiness and early college success of students who graduated from Republic of the Marshall Islands high schools between spring 2015 and spring 2017 and enrolled at the College of the Marshall Islands as first-time students between fall 2015 and fall 2017. Students' demographic characteristics included gender, Pell grant recipient status (an indicator of economic need), high school attended, and race/ethnicity. Academic preparation characteristics included standardized test scores and grade point average in high school. College readiness and early college success were defined as being placed into only credit-bearing math and English courses at the College of the Marshall Islands, earning all attempted credits during the first year of college, and persisting to a second year of college.

The study addressed three research questions for these cohorts of students:

1. What were the academic preparation characteristics of students?
2. What percentage of students demonstrated college readiness and early college success, as shown by the indicators of college readiness and early college success examined for this study?
3. How did students' demographic and academic characteristics predict their success in earning all attempted credits and persisting to a second year of college, after other characteristics were controlled for?¹

The data sources, sample, and methods used in the report are described in box 2 and discussed in detail in appendix B.

Box 2. Data sources, sample, and methods

Data sources. The Republic of the Marshall Islands Ministry of Education and the College of the Marshall Islands provided all data for this study. Appendix B provides a more detailed description of the data, including a summary of data sources by research question.

- *Student demographic characteristics.* The College of the Marshall Islands provided the data on demographic characteristics.
- *Student high school academic preparation.* The College of the Marshall Islands provided the data on high school academic preparation, except for data on performance on the Marshall Islands Standards Assessment Test (MISAT) for grade 10 and 12 high school students in 2015–17, which were provided by the Ministry of Education.
- *Early college success.* The College of the Marshall Islands provided data on student placement into only credit-bearing math and English courses, earning all attempted credits during the first year of college, and persisting to a second year of college.

A complete list of variables examined in this study is in appendix B.

Sample. The analytic sample consisted of students who graduated from one of five Republic of the Marshall Islands public high schools from spring 2015 through spring 2017 and enrolled as first-time, degree-seeking students at the College of the Marshall Islands between fall 2015 and fall 2017.¹ Of the 482 students in the final analytic sample, 336 had complete data, and 146 were missing data for one or more academic preparation characteristics. No students had missing data for the indicators of college readiness and early college success. To preserve the study's sample size, the study team used multiple imputation procedures to impute missing data. For additional details, see appendix B.

1. Because only 5 percent of students placed into credit-bearing math and English courses, it was not feasible to examine such placement as an indicator of college readiness and success. As a result, the study examined the relationship between students' demographic and academic characteristics and only two indicators of college success (earning all credits attempted during the first year of college and persisting to a second year of college) to answer research question 3 (see box 2 for more information).

Methodology. The study team generated descriptive statistics (percentages, means, standard deviations) across all cohorts of students in the final analytic sample to address research questions 1 and 2.

The study team used two multiple logistic regression models to determine which student demographic and academic preparation characteristics predict college readiness and early college success (research question 3). The first model used student demographic and academic preparation characteristics to predict whether a student earned all attempted credits during the first year at the College of the Marshall Islands. The second model used student demographic and academic preparation characteristics to predict persistence to a second year of college. Estimated probabilities were calculated from the results of the logistic regression models for each predictor variable.

Only 5 percent of students placed into only credit-bearing math and English courses. It was not feasible to conduct logistic regression analyses to predict achieving this indicator because there was not enough variability in the outcome. Likewise, it was not feasible to conduct logistic regression analyses to predict achieving all three indicators of college readiness and early college success because only 3 percent of students in the study sample achieved all three indicators.

Some student demographic characteristics (race/ethnicity, primary language spoken at home, and Pell grant status) and academic preparation characteristics (course grades) were excluded from the regression models because they were too closely correlated with other student characteristics or because more than 98 percent of students shared the same characteristics.

For additional details on the study's methodology, see appendix B.

Interpretation. Group differences that were statistically significant and 10 percentile points or larger in magnitude were considered major. Those that were statistically significant but smaller than 10 percentile points in magnitude were considered minor.

The study team conducted sensitivity analyses to determine whether the findings were consistent across methods of handling missing data. Findings are presented in appendix D.

Note

1. The sample excluded students from Life Skills Academy in the Marshall Islands Public School System. Students attending that school make up less than 3 percent of the total public high school student population (grades 9–12; Marshall Islands Public School System, 2018). In addition, students enrolled in private high schools in the Republic of the Marshall Islands were not included in this study.

What the study found

This section describes key findings. (See tables C1–C7 in appendix C for additional details.)

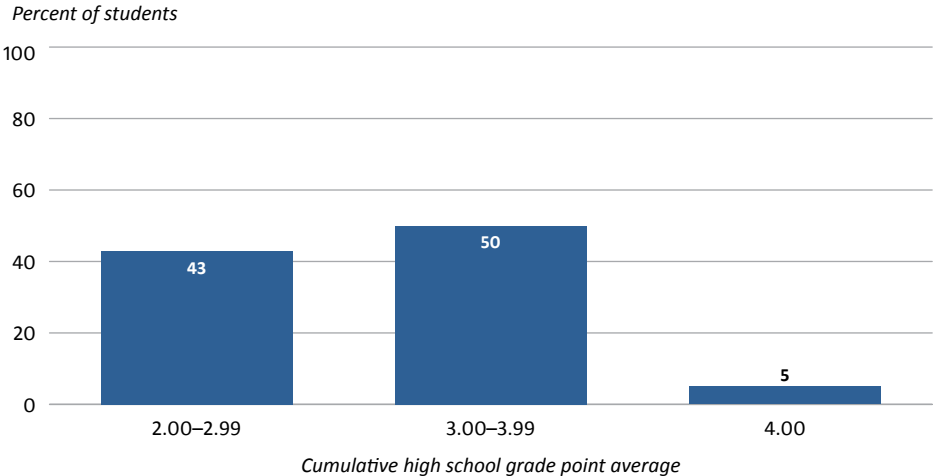
More than half of high school graduates had a cumulative grade point average of 3.00 or higher

About 55 percent of 2015–17 high school graduates who enrolled at the College of the Marshall Islands had a cumulative high school grade point average of 3.00–4.00. About 43 percent had a grade point average of 2.00–2.99 (figure 1; see table C1 in appendix C).

Most students met or exceeded 30 percent or more of the math and English benchmarks on the grade 10 Marshall Islands Standards Assessment Test

Students attending public high school in the Republic of the Marshall Islands take the Marshall Islands Standards Assessment Test (MISAT) in grade 10. MISAT performance scores indicate the percentage of benchmarks in which a student is proficient (meeting grade-level expectations) or advanced (exceeding grade-level expectations). Possible scores on the MISAT range from 0 to 100 percent. About 57 percent of students met or exceeded 30 percent or more of the benchmarks in math, and about 97 percent met or exceeded 30 percent or more of the benchmarks in English (figure 2).

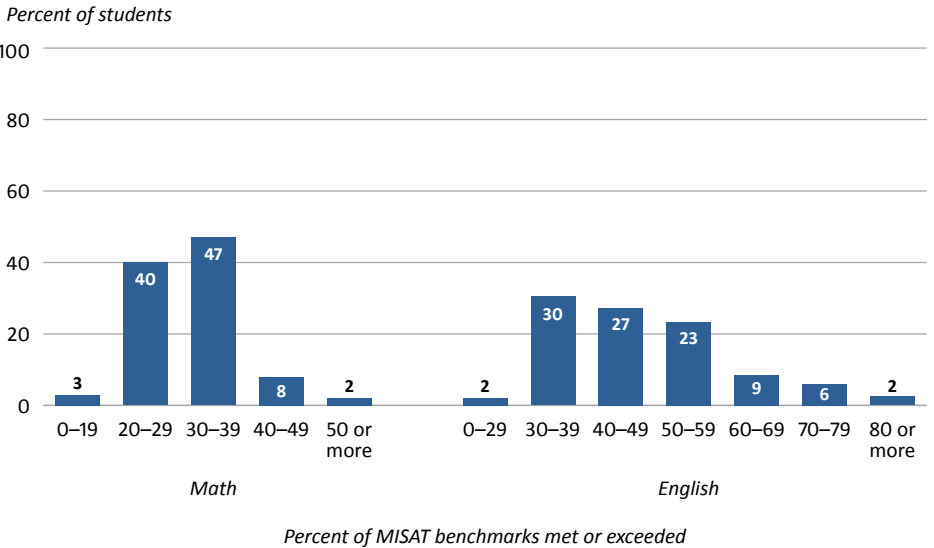
Figure 1. Overall, 55 percent of students in the 2015–17 entering cohorts at the College of the Marshall Islands had a cumulative high school grade point average of 3.00 or higher



Note: Across students in all high school graduation cohorts ($n = 482$), 207 students had a cumulative high school grade point average of 2.00–2.99, 248 students had a cumulative grade point average of 3.00–3.99, and 24 students had a cumulative grade point average of 4.00. Values for 0.00–0.99 and 1.00–1.99 have been suppressed because of small sample size.

Source: Authors’ calculations based on data from the College of the Marshall Islands.

Figure 2. Most students in the 2015–17 entering cohorts at the College of the Marshall Islands met or exceeded 30 percent or more of math and English benchmarks on the Marshall Islands Standards Assessment Test



MISAT is Marshall Islands Standards Assessment Test.

Note: Across students ($n = 482$) for the MSIAT benchmarks in math, 16 students met or exceeded 0–19 percent of benchmarks, 191 students met or exceeded 20–29 percent, 226 students met or exceeded 30–39 percent, 39 students met or exceeded 40–49 percent, and 10 students met or exceeded 50 percent or more. For the MISAT benchmarks in English, 10 students met or exceeded 0–29 percent of benchmarks, 147 students met or exceeded 30–39 percent, 131 students met or exceeded 40–49 percent, 112 students met or exceeded 50–59 percent, 41 students met or exceeded 60–69 percent, 29 students met or exceeded 70–79 percent, and 12 students met or exceeded 80 percent or more. Percentages may not sum to 100 because of rounding.

Source: Authors’ calculations based on data from the Republic of the Marshall Islands Ministry of Education.

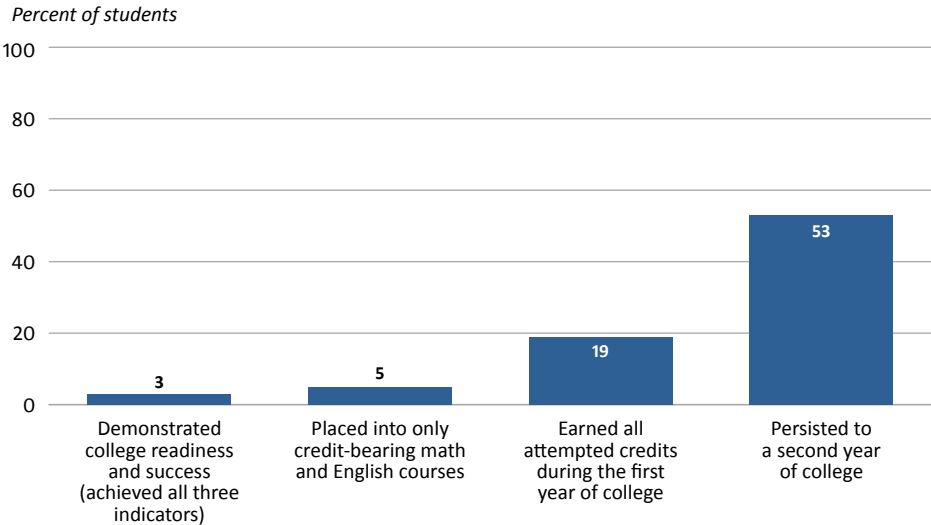
Only 3 percent of first-time students in the 2015–17 entering cohorts at the College of the Marshall Islands achieved all three indicators of college readiness and early college success

This study defined college readiness and early college success as achieving all three of the indicators at the College of the Marshall Islands: placing into only credit-bearing math and English courses, earning all credits attempted during the first year, and persisting to a second year. Only 3 percent (14 students) of students in the analytic sample achieved all three indicators (see table C3 in appendix C). Of this group, 79 percent (11 students) were female, 50 percent (7 students) graduated from Marshall Islands High School, and 93 percent (13 students) received a Pell grant. Their average cumulative high school grade point average was 3.82, and they met or exceeded 44 percent of the math benchmarks and 59 percent of the English benchmarks on the grade 10 MISAT, on average. None of them received a D or F in their grade 9–12 math or English courses.

Many students persisted to a second year even if they did not place into only credit-bearing math and English courses or earn all the credits they attempted during their first year at the College of the Marshall Islands

About 57 percent of students in the analytic sample achieved at least one indicator of college readiness and early college success at the College of the Marshall Islands, with 5 percent placing into only credit-bearing math and English courses, 19 percent earning all attempted credits during the first year, and 53 percent persisting to a second year (figure 3).²

Figure 3. The percentage of students in the 2015–17 entering cohorts at the College of the Marshall Islands who demonstrated college readiness and early college success varied by indicator



Note: Across students in all high school graduation cohorts ($n = 482$), 14 students demonstrated college readiness and early college success (by achieving all three indicators), 24 students placed into only credit-bearing courses, 90 students earned all attempted credits, and 254 students persisted to a second year. The indicators of college readiness and early college success (except for meeting all three indicators) are not mutually exclusive categories. Source: Authors' calculations based on data from the College of the Marshall Islands.

2. Although only 5 percent of students placed into both credit-bearing math and English courses, higher percentages of students placed into only one of the two: 19 percent placed into only credit-bearing math courses and 22 percent placed into only credit-bearing English courses.

Students with a higher high school grade point average were more likely than other students to earn all credits attempted during the first year of college and to persist to a second year, after other student characteristics were accounted for

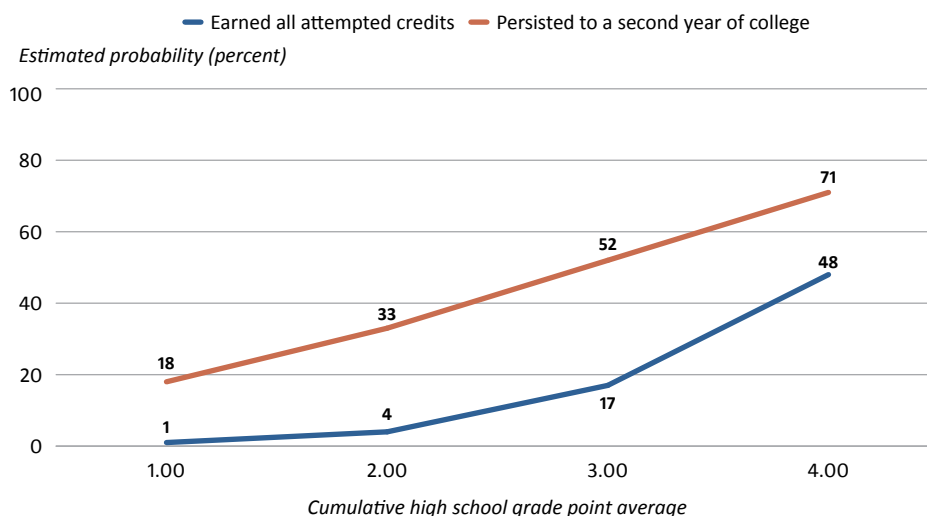
Students who had a higher cumulative high school grade point average were more likely than other students to earn all credits attempted during their first year at the College of the Marshall Islands and to persist to a second year of college. The differences between the average cumulative grade point average of students who achieved these indicators and students who did not were major (see box 2 for definitions of major and minor differences). Students with a cumulative high school grade point average of 4.00 had a 48 percent probability of earning all attempted credits and a 71 percent probability of persisting to a second year of college. The probability of achieving these indicators decreased as cumulative high school grade point average decreased (figure 4; see tables C4–C7 in appendix C).

Graduates of Laura High School were more likely than graduates of other high schools to earn all credits attempted during their first year at the College of the Marshall Islands

Graduates of Laura High School, one of the five high schools on the islands, were more likely than graduates of other schools to earn all credits attempted during their first year at the College of the Marshall Islands, after other demographic and academic preparation characteristics were accounted for. The difference was major, with the Laura High School graduates having a 34 percent probability of achieving this indicator compared with an 8–20 percent probability among graduates of the other four high schools in the study (figure 5; see tables C4–C7 in appendix C).

After other demographic and academic preparation characteristics were accounted for, students were equally likely to persist to a second year of college regardless of the high school they graduated from. That probability ranged from 45 percent to 59 percent across the five high schools.

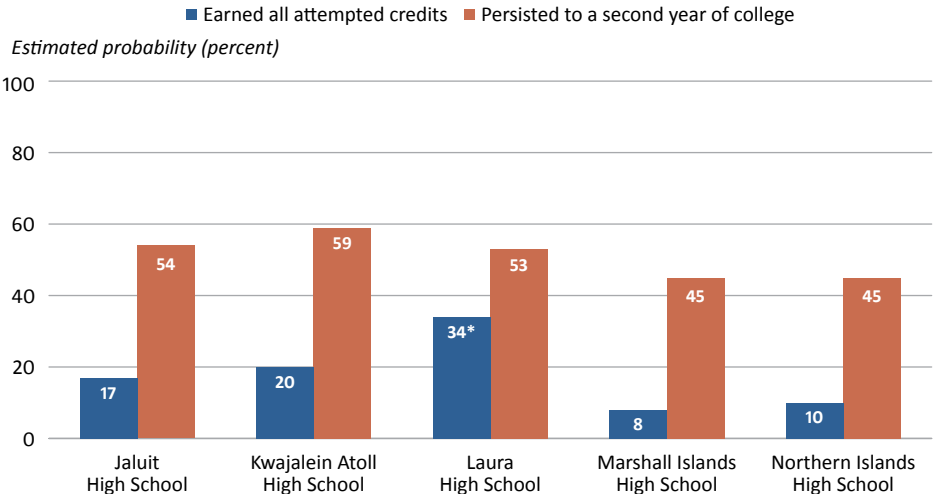
Figure 4. Students in the 2015–17 entering cohorts at the College of the Marshall Islands with a higher cumulative high school grade point average were more likely than other students to earn all credits attempted during their first year of college and to persist to a second year



Note: Across students in all high school graduation cohorts ($n = 482$), 90 earned all attempted credits, and 254 persisted to a second year. For continuous predictor variables, estimated probabilities were calculated at specific levels of the predictor variable. For cumulative grade point average estimated probabilities were calculated only for 1.00, 2.00, 3.00, and 4.00. Regression analyses showed that students with higher cumulative grade point averages were more likely to achieve these indicators than students with lower cumulative grade point averages. See tables C6 and C7 in appendix C for detailed results.

Source: Authors' calculations based on data from the Republic of the Marshall Islands Ministry of Education.

Figure 5. Students who graduated from Laura High School in 2015–17 had the highest probability of earning all attempted credits during the first year at the College of the Marshall Islands



* A statistically significant difference (at $p < .05$) representing a major between-group difference of at least 10 percentile points.

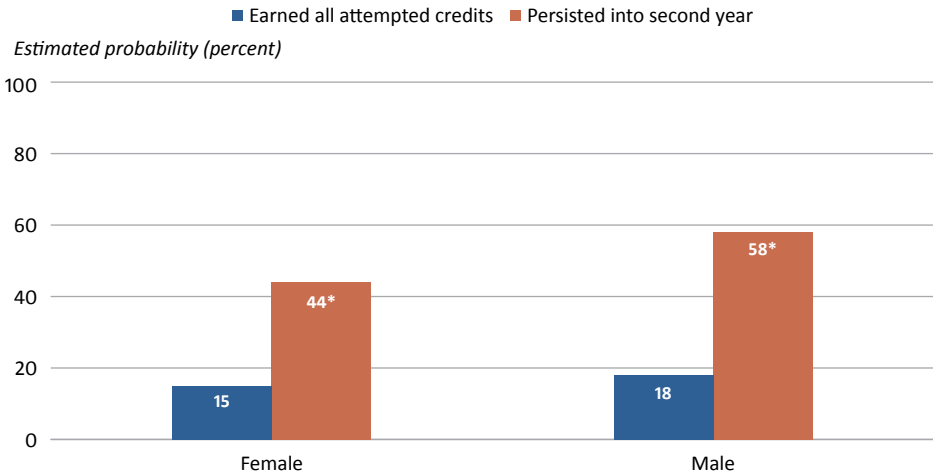
Note: See tables C6 and C7 in appendix C for detailed results.

Source: Authors' calculations based on data from the College of the Marshall Islands.

There was no significant gender difference in the probability of earning all attempted credits during their first year at the College of the Marshall Islands, but male students were more likely than female students to persist to a second year of college

The regression analysis revealed no significant gender difference in the probability of students earning all credits attempted during their first year at the College of the Marshall Islands, after other student demographic and academic preparation characteristics were accounted for. The probability was 15 percent for female students and 18 percent for male students (figure 6). However, there was a major difference by gender in the likelihood of

Figure 6. Among students in the 2015–17 entering cohorts at the College of the Marshall Islands, male students were more likely than female students to persist to a second year of college



* A statistically significant difference (at $p < .05$) representing a major between-group difference of at least 10 percentile points.

Note: See tables C6 and C7 in appendix C for detailed results.

Source: Authors' calculations based on data from the College of the Marshall Islands.

persisting to a second year of college. Female students had a 44 percent probability of doing so, whereas male students had a 58 percent probability (see tables C4–C7 in appendix C).

Limitations

This study has four primary limitations. First, the study sample included students who graduated from the Republic of the Marshall Islands public high schools in spring 2015 through spring 2017 and enrolled as first-time students at the College of the Marshall Islands in the fall of those years but excluded other students. Thus, the findings might not apply to students who did not meet the study inclusion criteria, such as students who graduated from private high schools and students who enrolled at the College of the Marshall Islands during other years. For example, previous research indicates that students in private schools in the Republic of the Marshall Islands are more likely than public school students to perform at proficient or advanced levels on the grade 10 MISAT benchmarks (Marshall Islands Public School System, 2018). Although the current study included students across all semesters of enrollment (fall, spring, and summer), the study team could not confirm whether the students were enrolled as full-time or part-time students.

A second limitation is that the findings are descriptive and correlational and so do not represent causal relationships between demographic and academic preparation characteristics and college readiness and early college success. For example, transportation issues or other factors that were not examined in this study could have caused first-time College of the Marshall Islands students to miss classes and fail a credit-bearing course. Not all students who do not earn all attempted credits in their first year of college (or who do not achieve the other indicators examined in this study) are necessarily inadequately prepared for college-level coursework.

Third, the study was limited to the available data on demographic characteristics and academic preparation of students and examined a limited number of predictors of college readiness and early college success. For example, it did not include grade 12 MISAT data because scores were not available for approximately 35 percent of students in the final analytic sample. Although the study focused on grade 10 MISAT data, it is possible that grade 12 scores also relate to college readiness and early college success. The study originally intended to examine high school attendance as a potential predictor, but those data were not available. Other factors beyond the scope of the study likely played a role in college readiness and early college success among students graduating from public high schools in the Republic of the Marshall Islands and enrolling at the College of the Marshall Islands.

A fourth limitation is that the multiple logistic regression analyses included a large number of predictors for a study with a small sample size. Using multiple predictors could have limited the extent to which any individual predictor emerged as significant. Had the study included fewer predictors or a larger sample, other demographic or academic preparation characteristics might have emerged as significant predictors of the study's indicators of college readiness and early college success. In some cases the small number of students demonstrating certain characteristics of interest likely limited the extent to which the study's analyses could detect relationships.

Implications

This is the first study of college readiness and early college success among students who graduated from public high schools in the Republic of the Marshall Islands and enrolled at the College of the Marshall Islands. Its findings provide stakeholders with information about these students, an important first step in identifying graduating high school students who are most likely and those who are least likely to be college ready. This study also has implications for policies and practices currently in place or under consideration for supporting academic success among this population.

Implications for monitoring and supporting academic performance during high school

The findings suggest that monitoring a high school student's grade point average might guide educators in identifying students at risk of being unprepared for college coursework and provide opportunities for intervention before students begin college. In addition, it might be important for educators in Republic of the Marshall Islands high schools to provide additional targeted academic supports for students, particularly students who are not performing well. Supports aligned with individual student needs might include before-school or after-school tutoring, organized study groups, and interventions during the school day. Providing such supports, and learning which supports are most effective, might help ensure that high school graduates are academically prepared for college.

Implications for supporting female students in persisting to a second year of college

Female students in this study were less likely to persist to a second year of college. Further research into why that happens could inform efforts to improve female students' rates of persisting in college in the Republic of the Marshall Islands.

Implications for continuously improving policies and practices that promote student academic performance during high school

The findings suggest that student college readiness and early college success vary across student demographic characteristics, including high school attended and gender. Understanding the sources of such variation might support the continuous improvement of policies and practices that promote student academic performance (Bryk et al., 2015). Educators in the Republic of the Marshall Islands might want to investigate those sources to learn which characteristics of students' personal and academic environments can be leveraged to promote college readiness and early college success for all learners. For example, the findings showed that the public high schools in this study varied in the proportion of graduates who earned all the credits attempted during the first year of college. The high schools also varied by enrollment, student–teacher ratio, geographic location, and accreditation level (Marshall Islands Public School System, 2018). It is possible that their academic preparation practices also differ. Since all these factors could contribute to the variation in the number of students who earned all credits attempted, educators in the Republic of the Marshall Islands might want to gain a better understanding of which factors are particularly important to early college success in order to inform policies and practices.

Implications for future research on the multiple measure placement system at the College of the Marshall Islands

Education stakeholders in the Republic of Marshall Islands might consider future research to examine the impact of the multiple measure placement system on students' college readiness and early college success. This system, in place since 2017, uses grade 11 and 12 math and English grades, cumulative high school grade point average, and placement exams to place students into either developmental or credit-bearing courses. Recent studies on the preliminary impact of multiple measure placement systems (for example, Barnett et al., 2018; Ganga & Mazzariello, 2019) suggest that such systems enable more accurate placement decisions than a single placement exam, have a positive effect on course completion, and benefit women and racial/ethnic minority students. It is important to examine additional cohorts beyond the scope of this study to gauge the impact of this new placement system on student college readiness and early college success. Future research might inform ongoing efforts to revise placement procedures. Stakeholders might consider tracking the academic performance indicators used in the multiple measure placement system, including high school cumulative grade point average and grade 11 and 12 math and English course grades, to identify students who need more support to be prepared for college when they graduate from high school. If the low rate of placement of students into only credit-bearing courses found in this study persists, stakeholders could consider additional student supports and further modifications to the current placement system.

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